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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,223	05/28/2002	Roumiana Tsenkova	026350-070	1320

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Robert G Mukai
Burns Doane Swecker & Mathis
PO Box 1404
Alexandria, VA 22313-1404

EXAMINER	
KREMER, MATTHEW J	
ART UNIT	PAPER NUMBER
3736	8

DATE MAILED: 07/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

EC

Office Action Summary	Application No.	Applicant(s)	
	09/980,223	TSENKOVA, ROUMIANA	
	Examiner	Art Unit	
	Matthew J Kremer	3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 12-34 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 12-34 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,7 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 18-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 18 recites the limitation "a near infrared ray generator for generating visual light rays and/or near infrared rays" which renders the claim unclear. It is unknown if the Applicant intends that generators that only generate visual light to be included in the term "near infrared generator" which is contrary to the plain meaning of the term "near infrared generator."

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 12-15, 18-19, 23 are rejected under 35 U.S.C. 102(b) as being anticipated by an article entitled "Near-Infrared Spectroscopy of Individual Cow Milk as a Means for Automated Monitoring of Udder Health and Milk Quality" by Tsenkova et al.

(cited by Applicant). Tsenkova et al. discloses using transmittance spectra in the NIR range from unhomogenized milk samples for the diagnosis of mastitis in cows. (Abstract of Tsenkova et al.). In regard to claims 12-13, multiple linear regression analysis was used, which bases its diagnosis on mastitis on variations in the spectra. These variations are being compared for similarity and differences to determine whether the reading is classified as mastitis or not. In regard to claims 14-15 and 19, a wavelength range of 680-1235 nm, which includes the wavelength range of 700-1100 nm, was used. In regard to claim 18, Tsenkova et al. discloses that a computer and a Pacific Scientific Spectrophotometer Model 6250 were used. The Pacific Scientific Spectrophotometer includes an NIR generator, optical system, and detector (See column 7, lines 43-63 of U.S. Patent 5,830,133 to Osten et al.). In regard to claim 23, the samples were heated to 40 °C.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 16-17, 27, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over an article entitled "Near-Infrared Spectroscopy of Individual Cow Milk as a Means for Automated Monitoring of Udder Health and Milk Quality" by Tsenkova et

al. (cited by Applicant) as applied to claims 12, 15, 18-19, and 23, and in view of U.S. Patent 5,830,133 to Osten et al., and further in view of U.S. Patent 6,167,297 to Benaron. Tsenkova et al. does not teach the use of SIMCA. Tsenkova et al. teaches the use of extracting features for the diagnosis of mastitis using multiple linear regression. Osten et al. teaches that PLS is a suitable substitute for multiple linear regression. Benaron teaches that SIMCA is a suitable substitute for PLS. From the combined teaching of Benaron and Osten et al., one with ordinary skill in the art would know that SIMCA is a suitable substitute for multiple linear regression. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use SIMCA in the method and apparatus of Tsenkova et al. since the combined teaching of Osten et al. and Benaron implies that SIMCA is a suitable substitute for multiple linear regression.

7. Claims 21 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over an article entitled "Near-Infrared Spectroscopy of Individual Cow Milk as a Means for Automated Monitoring of Udder Health and Milk Quality" by Tsenkova et al. (cited by Applicant) as applied to claims 18-19, and in view of U.S. Patent 4,385,590 to Mortensen. Tsenkova et al. does not teach that the particular measurements were taken on-line. Tsenkova et al. teaches that on-line analysis is desired to help farmers make managerial decisions. (Abstract of Tsenkova et al.). It is well known in the art to use feeders for on-line photoscopic measurements. (Fig. 1 of Mortensen). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention

was made to use the feeder of Mortensen in the device of Tsenkova et al. since Tsenkova et al. teaches that on-line analysis is desired and Mortensen teaches that feeders are used to take on-line measurements. In regard to claim 25, the samples were heated to 40 °C.

8. Claims 29 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over an article entitled "Near-Infrared Spectroscopy of Individual Cow Milk as a Means for Automated Monitoring of Udder Health and Milk Quality" by Tsenkova et al. (cited by Applicant) in view of U.S. Patent 4,385,590 to Mortensen as applied to claims 21 and 25, and further in view of U.S. Patent 5,830,133 to Osten et al., and further in view of U.S. Patent 6,167,297 to Benaron. Tsenkova et al. does not teach the use of SIMCA. Tsenkova et al. teaches the use of extracting features for the diagnosis of mastitis using multiple linear regression. Osten et al. teaches that PLS is a suitable substitute for multiple linear regression. Benaron teaches that SIMCA is a suitable substitute for PLS. From the combined teaching of Benaron and Osten et al., one with ordinary skill in the art would know that SIMCA is a suitable substitute for multiple linear regression. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use SIMCA in the method and apparatus of Tsenkova et al. since the combined teaching of Osten et al. and Benaron implies that SIMCA is a suitable substitute for multiple linear regression.

9. Claims 20, 22, 24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over an article entitled "Near-Infrared Spectroscopy of Individual Cow Milk as a Means for Automated Monitoring of Udder Health and Milk Quality" by Tsenkova et al. (cited by Applicant) as applied to claims 18-19, and in view of U.S. Patent 4,385,590 to Mortensen, and further in view of U.S. Patent 5,520,787 to Hanagan et al. Tsenkova et al. does not teach that the particular measurements were taken on-line. Tsenkova et al. teaches that on-line analysis is desired to help farmers make managerial decisions. (Abstract of Tsenkova et al.). It is well known in the art to use feeders for on-line photoscopic measurements. (Fig. 1 of Mortensen). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the feeder of Mortensen in the device of Tsenkova et al. since Tsenkova et al. teaches that on-line analysis is desired and Mortensen teaches that feeders are used to take on-line measurements. The combination does not teach the use of optic fibers. Tsenkova et al. discloses that a computer and a Pacific Scientific Spectrophotometer Model 6250 were used. Hanagan et al. teaches that optical fibers are used to connect the measuring site to a spectrophotometer. (column 7, lines 43-51 of Hanagan et al.). Such optical fibers would fulfill the requirements of connecting on-line measurements sites to the spectrophotometer. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the optical fibers of Hanagan et al. in the combination since the combination teaches that some method or apparatus for attaching the on-line measurement site to the spectrophotometer is required and

Hanagan et al. teaches one such method and apparatus. In regard to claims 24 and 26, the samples were heated to 40 °C.

10. Claims 28, 30, 32, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over an article entitled "Near-Infrared Spectroscopy of Individual Cow Milk as a Means for Automated Monitoring of Udder Health and Milk Quality" by Tsenkova et al. (cited by Applicant), and in view of U.S. Patent 4,385,590 to Mortensen, and further in view of U.S. Patent 5,520,787 to Hanagan et al. as applied to claims 20, 22, 24, and 26, and further in view of U.S. Patent 5,830,133 to Osten et al., and further in view of U.S. Patent 6,167,297 to Benaron. Tsenkova et al. does not teach the use of SIMCA. Tsenkova et al. teaches the use of extracting features for the diagnosis of mastitis using multiple linear regression. Osten et al. teaches that PLS is a suitable substitute for multiple linear regression. Benaron teaches that SIMCA is a suitable substitute for PLS. From the combined teaching of Benaron and Osten et al., one with ordinary skill in the art would know that SIMCA is a suitable substitute for multiple linear regression. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use SIMCA in the method and apparatus of Tsenkova et al. since the combined teaching of Osten et al. and Benaron implies that SIMCA is a suitable substitute for multiple linear regression.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J Kremer whose telephone number is 703-605-

0421. The examiner can normally be reached on Mon. through Fri. between 7:30 a.m. - 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Winakur can be reached on 703-308-3940. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-0758 for regular communications and 703-308-0758 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0858.

Matthew Kremer
Assistant Examiner
Art Unit 3736
July 10, 2003

MAX F. HINDENBURG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700